

US009636481B2

# (12) United States Patent

### Campbell et al.

## (54) STEERABLE CATHETER WITH BRAKE ASSEMBLY

(71) Applicant: **Boston Scientific Scimed, Inc.**, Maple

Grove, MN (US)

(72) Inventors: Andrew Campbell, Reading, MA (US);

Paul Barner, Valencia, CA (US)

(73) Assignee: Boston Scientific Scimed, Inc., Maple

Grove, MN (US)

(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 681 days.

(21) Appl. No.: 14/038,311

(22) Filed: Sep. 26, 2013

(65) **Prior Publication Data** 

US 2014/0088497 A1 Mar. 27, 2014

#### Related U.S. Application Data

- (60) Provisional application No. 61/706,307, filed on Sep. 27, 2012.
- (51) **Int. Cl.**A61M 25/01 (2006.01)

  A61B 1/005 (2006.01)
- (52) U.S. Cl.

CPC ...... A61M 25/0136 (2013.01); A61B 1/0051 (2013.01); A61B 1/0052 (2013.01); A61B 1/0057 (2013.01); A61M 25/0105 (2013.01); A61M 25/0133 (2013.01); A61M 25/0147 (2013.01)

### (10) Patent No.: US 9,636,481 B2

(45) **Date of Patent:** 

May 2, 2017

#### (58) Field of Classification Search

See application file for complete search history.

#### (56) References Cited

#### U.S. PATENT DOCUMENTS

4,461,282 A *	7/1984	Ouchi F16D 51/22
		600/148
5,014,685 A *	5/1991	Takahashi A61B 1/0052
		600/148
2006/0264819 A1*	11/2006	Fischer A61M 25/0136
		604/95.04
2008/0188871 A1		Smith et al.
2009/0287188 A1	11/2009	Golden et al.

<sup>\*</sup> cited by examiner

Primary Examiner — Laura Bouchelle Assistant Examiner — Anh Bui (74) Attorney, Agent, or Firm — Bookoff McAndrews, PLLC

#### (57) ABSTRACT

A catheter includes a handle and an elongate member extending from the handle. The catheter may also include steering system coupled to the handle. The steering system may be configured to deflect at least a portion of the elongate member in at least one direction. The catheter may also include a locking mechanism configured to lock the portion of the elongate member in a deflected configuration, and a lever coupled to the handle. The lever may be configured to move from a first position to a second position to engage the locking mechanism. The lever may also be configured to be separably retained at least at one of the first position or the second position to prevent movement therebetween.

#### 16 Claims, 8 Drawing Sheets

